THE

VETERINARY JOURNAL

FEBRUARY, 1915.

BRIGADIER-GENERAL JOHN MOORE, DIRECTOR OF VETERINARY SERVICES WITH THE BRITISH EXPEDITIONARY FORCE, FRANCE.

No man in the profession at the present moment has more serious or greater responsibilities upon his shoulders than the subject of our present biographical sketch, and no man has come through the strenuous ordeal of the war up to the present better than General Moore. General Moore was born on May 24, 1864, fourth son of Mr. John Moore, Longhurst, Northumberland. He was educated at Morpeth Grammar School, and then studied for the veterinary profession at the Royal (Dick) Veterinary College, Edinburgh, where he obtained numerous medals and scholarships, including the Fitzwygram medal. The Army Veterinary Department is a credit to all concerned, and the lay press, as well as the professional papers, are high in the praise of the good work it is doing; and undoubtedly a great deal of this success is due to the man who sits at the helm.

After acting as assistant with various practitioners he entered the Army in 1888, being soon sent to India, where he was attached to the 16th Lancers.

After holding several regimental and remount appointments he was sent on special service to Thibet in the China-Lushai Campaign, receiving for this the Service medal. Again attached to the Remount Department, he acquired an intimate knowledge of the sources from which horses could be obtained for Army purposes in Australia, Canada, and the United States, his knowledge being made the subject of a very interesting lecture before

XUM

the Royal United Service Institute, the title being "On Horses of the World and Resources for Remount Purposes."

On the outbreak of war between Russia and Japan in 1904, he was selected and sent with Colonel Lawley (now Lord Wenlock) to make arrangements in the Western Provinces for the establishment of remount depots in case the British were drawn into hostilities. This mission also took him to Mexico, California, Vancouver, and North-West Territory, and it was whilst in the Rocky Mountains that he narrowly escaped death from a snow slide, which swept away the railway line only a few moments after the train in which he was travelling had passed by. After his return to India he was again selected for active service, this time for the Sudan in the expedition against the Mullah, and for this he received the Khedive's medal.

Returning to England he was attached to the 3rd Dragoon Guards and stationed at Dundalk, from whence he was sent on a special mission to the Argentine Republic for remount purchasing purposes, and it was whilst in veterinary charge of the horses on the "Denton Grange" that he had his first experience of a shipwreck, the passengers having to be rescued in surf boats and the horses made to swim ashore, the vessel becoming a total wreck. Attached to General Plumer's force during the South African War, he saw service in Rhodesia and the Northern Transvaal, being mentioned several times in despatches and receiving special promotion.

In 1905, with the rank of Lieutenant-Colonel, he was appointed Inspecting Veterinary Officer of the Eastern Command, thence again to India, and in 1910 back home to take over the Irish Command, where his influence in the establishing of the Officers' Training Corps at the Royal Veterinary College will always be remembered.

In January of last year Colonel Moore was transferred to the Aldershot Command, and when war broke out with Germany was appointed Director of Veterinary Services with the British Expeditionary Force, an appointment which is a most onerous and arduous one, the number of sick and wounded horses now being treated by the Veterinary Corps being quite unprecedented, and a severe strain on both officers and men. The advantages of these hospitals are too well known and valued to need comment, both from utilitarian and humane points of view,

and we have no fear but that when the history of the war comes to be written, the work done by Brigadier-General Moore and the officers and men of the Army Veterinary Corps will find as prominent a place as that allotted to any of the auxiliary departments which work side by side with those whose business it is to "sit tight" and bear the brunt of the actual fighting. Each is necessary to make a success of the whole, and the Army Veterinary Hospital System, in its first real great trial, can truthfully be said to have more than justified its existence.

Editorial.

ETHICS AND SUCCESS IN PRACTICE.

THE ethical attitude of a veterinary surgeon towards his fellow practitioner will be largely a matter of the personal equation. At any rate, in practice a scrupulous man with a well-balanced and discerning mind will always be more ethical than a coarse, inconsiderate, thoughtless being, who puts his own material welfare supremely first and that of the rest nowhere. As a secondary matter, although a right sense of the ideal practice of the principles of human morality and duty is primarily an inherent faculty not possessed in a like degree by every man of the same profession, yet a good all-round education ought to be a helpful safeguard against indulging in the sharp practice and petty meanness which the unscrupulous practitioner displays towards his professional neighbour. Hence we thoroughly believe in keeping up the standard of general and professional education in our ranks. The frequent objectionable attitude of some tradespeople towards each other, or of one showman to a rival, ought not to appeal to us, for there we see that badly educated or half-educated folk understand nothing about ethics.

So we often find that many of the flagrant breaches of professional etiquette committed by one member of our body against another are the acts of elderly practitioners who never received any deep or proper education. Let us "leave age its subtlety and grey-haired policy its mane of falsehood," assured that we neither hope to meet now nor hereafter.

XUM

Yet the faulty display of a proper professional spirit is not limited to elderly men altogether, and we have known in our time subjects that have acted as pupils for three or four years to practitioners who, after qualifying and having learnt all they can, including a complete knowledge of their principals' clients, have set up in practice within a stone's throw of them and solicited all their former principals' customers. The pupil cannot be bound out like the assistant, or, at any rate, it is seldom done. Such procedure as we have indicated can only be described as about the lowest form of professional poaching, and no ethical consideration should be given to such a man by his neighbouring professional workers. But still we often find that this renegade is aided and abetted in his operations in the same town or countryside by a rival practitioner of the principal where the sinner served his pupilage. The facts disclosed at the recent Council meeting point to a very low standard of conduct on the part of some of our members.

As regards starting in practice where work is plentiful and labourers few, there are legitimate ways of doing this which appeal to fair-minded men. Blatant advertising ought, of course, to be officially tabooed, but taking part in social work, or obtaining an official position with a governing body, or to a company, suggest themselves as ways in which a young man can bring himself into prominence. A bare announcement to the public that a man is qualified to practise can only be considered an appropriate and common-sense measure, and one of the best ways of doing it is to send a card with name, degree, telephone number, and address printed on it to all those people who possess stock, and to whom the graduate thinks he may be useful. At the same time, we consider that by far the best way to start in practice is to buy that vacated by a deceased, retiring, or removing practitioner. There will be a tendency for professional etiquette to be better observed in this case than the other.

How is success in practice attained, and how ought it to be acquired?

The answer to the first question will probably depend on a man's point of view. One reply will be that success depends upon the amount of wealth accumulated. Another will be that the successful practitioner is he who achieves the best results in the treatment of his cases. Hence it follows that the man with

a small practice who gives plenty of time and trouble to his charges may be really more successful than the practitioner with a large run, a rich *clientèle*, and a fat bank balance.

We have known men who might be described as successful practitioners who have acquired their positions by very shady means. They have even taken contracts on from rival practitioners before proper notice of the termination of the contract had been given to the original holder, and no fault whatever had been found with him. In this connection we should like to see a case taken to law to determine what notice a practitioner who takes a contract at a fixed sum per horse per year is entitled to before the contract is terminated, and what compensation he should receive in lieu of proper notice. We have never read or heard a judicial decision on this point.

One word on the second question we asked, viz.: How ought success in practice to be acquired? The answer is by energy, ability, business habits, tact, and hard work; but, above all, the man who desires to practise ethics (and in a noble profession we all ought to do this) will obtain work only in a fair, just, and legitimate manner.

We have often thought that a short course in the science which treats of the principles of human morality and duty might be advantageously included in our professional curriculum. The recent discussion at the meeting of our governing body would seem to prove it. We feel sure that if this were done it would in the future react beneficially on the veterinary profession.

XUM

General Articles.

FOOD FOR THOUGHT.

By ERNEST J. BURNDRED, M.R.C.V.S., D.V.H.

The public abattoir is an excellent place for showing the pathological student the wonderful recuperative power of Nature and also some of her vagaries, and at the same time it shows him his own limitations. I have often been struck by the enormous damage done to the flesh of an animal by the bumping and bruising caused by a railway journey, and yet before slaughter the animal has appeared in perfect health.

In other cases where slaughter has not taken place for some time after the journey the reparative processes can be seen. The vagaries of Nature in carrying out pathological processes seem to merit more attention than they get.

Why is tuberculosis comparatively rare in the bullock, but when present it is often generalized?

Tuberculosis in cattle is a disease full of interest, and *post-mortem* examinations often furnish surprises. I have seen cows, for instance, which were obviously very badly affected with tuberculosis, but having no apparent lesions of the udder. Biological examination of the milk has been negative, confirming the clinical examination of the udder, but *post-mortem* examination has shown the carcase to be badly affected with tuberculosis, especially the mesenteric lymphatic glands and the peritoneum.

On the other hand, a cow which is apparently in good health is found to have a pronounced induration of the udder, and microscopical examination of the milk shows tubercle bacilli present. *Post-mortem* examination of the carcase shows probably tuberculosis of the lungs and bronchial and mediastinal glands, and maybe one or two centres of caseation in the mesenteric glands, but the rest of the carcase is apparently free. These two types of cases are quite common with me, but what is the explanation of them?

I particularly remember the milk of a farm being tuberculous, and an examination of the herd showed no cows giving any clinical indications of tuberculosis of the udder. It was found necessary to group and re-group until the milk of an individual cow was infective to a guinea-pig.

I once had a cow which was known to be giving tuberculous milk. She was a splendid-looking animal, the picture of health, and, of course, the farmer ridiculed the idea of tuberculosis. I made a most careful clinical examination of the udder, but failed to detect any induration. The cow was slaughtered, and *post-mortem* examination showed the pharyngeal glands much enlarged and caseous, one small caseous centre in mesenteric glands and very slight tuberculosis of the peritoneum covering the bowels. This investigation lasted six months, and yet at the end of that time there was no clinical evidence of tuberculosis of the udder. I know it is a common experience to get a positive milk when clinical examination shows apparent freedom of the udders, but usually a second visit in one month's time shows a cow with well-marked induration of the udder.

It seems, therefore, certain that there is a great difference in the individuality of tubercle bacilli, as also in the animals affected, and that sometimes tubercle bacilli gain an entrance to the animal's system during a period of lowered vitality, but cannot do more than maintain their existence when the animal regains its normal health. In view of the great headway which autogenous vaccines are making, the following cases are to my mind instructive:—

(1) Cow brought in for emergency slaughter with a "wry" neck. On *post-mortem* examination the lesions of tuberculosis found were: Tuberculosis of the first cervical vertebra and the lungs, carcase otherwise free.

(2) *Post-mortem* examination of carcase of cow showed tuberculosis of sternum and lungs, carcase otherwise free.

(3) Carcase of pig. Bronchial glands showed tuberculous deposit. Examination of glands of carcase, including head glands, were negative, but an abscess in the intermaxillary space proved to be tuberculous.

These cases seem to show that there are places in an animal's body which can be called "drainage centres" which attract the tubercle bacilli from the surrounding areas.

These are a few points in the pathology of tuberculosis which mystify me, but there are many more:—

Why does tuberculosis usually attack one quarter of the udder, preferably a posterior quarter?

Why do we sometimes get diagonal infections of a carcase,

that is, tuberculosis of the left parietal pleura and right parietal peritoneum, other times just tuberculosis of one or both pleuræ or peritoneum?

I know that there is a lymphatic circulation which seems to be imperfectly understood, but these results are so irregular that if they could be explained much might be cleared up.

A most important case of tuberculosis which I should have mentioned in connection with "drainage" occurred in a cow on a dairy farm. I saw this beast about a week after purchase, and on examination of the udder found an induration at the supero-posterior part of the left side, which might have been a much enlarged supra-mammary lymphatic gland. I took a sample of milk and examined it microscopically, but failed to find tubercle bacilli.

Biological examination of the milk was negative, and on several subsequent occasions microscopical examination was negative. I told the owner that the case was interesting and I should like to see the carcase. He agreed to send it to the abattoir, which he did about two months later. The animal had grown well in the meantime. *Post-mortem* examination showed tuberculosis of the lungs and pleura, mesenteric glands, and a large tuberculous abscess in the connective tissue immediately above the udder.

It appeared to me in this case that the abscess had saved the udder from infection. At the same time I had a sense of false security from the result of the biological test, because at any time the infection might have progressed and invaded the udder.

MORTALITY AMONGST CATTLE IN THE BEGA DISTRICT OF NEW SOUTH WALES.

By MAX HENRY, M.R.C.V.S., B.V.Sc.Syd.

During the years 1907 and 1908 the writer was stationed in the district referred to for fifteen months as a veterinary inspector under the Board of Health, the work carried out being the inspection of dairy cattle for manifest tuberculosis, actinomycosis and cancer, of pigs for manifest tuberculosis and swine fever, and of dairy premises and slaughter yards with regard to sanitation and cleanliness; whilst a certain amount of inspec-

tion of carcases for human consumption was performed at each centre. As over 90 per cent. of the farmers in the district are dairy farmers and had all to be visited, the work provided an excellent opportunity of becoming acquainted with the various diseased conditions found amongst the stock, the methods of farming employed, and the general carrying capacity of the country. As the district comprised all types of country, from rich alluvial flats to starvation country (which, except in the best of seasons, is all but useless for grazing purposes), the effect of the different types of country on the stock running thereon could be well observed: and although the most important part of the district was coastal there was attached to it, for administrative purposes, a large area of tableland country which furnished a good contrast.

Although so largely a dairying district, very few of the cattle receive any feed beyond what they obtain by grazing; and though this answers well in good seasons and on the richer lands, the cattle are naturally subjected to considerable ups and downs of condition as the seasons vary. On a few farms maize silage, pumpkins, and lucerne chaff and bran are fed regularly, on others maize and sorghum are grown and fed in the green state to cattle; but, generally speaking, very little of such feed is given. The district is an old-established one and has been grazed continuously and for several decades by milking cattle. Very little artificial fertilizer is used on crops and none on grass, and naturally, under the conditions in force, the best cannot be made of the farmyard manure, as the cattle are never housed. Still, the district was for many years renowned as a rich dairying district. At this time, although the rabbit pest was serious on the tablelands, it was only just beginning to make itself felt on the fringe of the coastal lands at the foot of the mountains.

During the whole period osteomalacia [1] amongst the coastal cattle was frequently observed, and it was soon noticed that the habit of bone-chewing and the occurrence of osteomalacia was largely confined to certain fairly well-marked areas within the district, but was never seen on the tablelands. The administration of bone-meal licks and the provision of a more generous ration was noted to have a beneficial effect as regards this condition. No mortality such as is about to be described was met with nor were any similar cases heard of.

XUM

In the early part of 1912 information was received that cattle were dying of some unknown complaint in the district, and the district stock inspectors were instructed to make a preliminary investigation. Their reports showed that a fair number had become affected by this complaint about the same time on a well-marked group of farms, that most of those affected died, and that the mortality ceased suddenly on the fall of rain. It was also noted that the district was going through a period of drought and that rabbits were swarming into the district from the waste lands.

In February, 1913, a wire was received from the district stock inspector stating that the complaint had recurred. On arriving in the district it was found that it had passed through a severe winter the previous year, when many head of cattle had died of starvation. The spring had been fair but the summer was again dry, and at this time what grass was left was in a dry and innutritious state. Rabbits were found to have increased enormously during the few preceding years, so much so that farmers were commencing to wire net the holdings, and the only feed worth calling such was within the netted paddocks. It is difficult for anyone without practical knowledge of the matter to realize what severe rabbit infestation can do in the way of lowering the carrying capacity of country and of keeping down the better and more nutritious grasses, leaving only the coarse indigestible grasses for the cattle. In some parts the ground was almost eaten bare by them, and the country immediately at the foot of the mountains whence the infestation had come had been abandoned as far as dairying was concerned.

The affected areas were found to be well defined, included the area affected in 1912, and somewhat more of the country as well. The cattle in certain areas of this country, as has been noted, are marked "bone-chewers," and that habit has been extending to what are regarded as medium lands. The better class of country is still quite free, and no mortality such as was being investigated had occurred on this class of country. This outbreak ceased abruptly when rain fell a few days later, although, as would be expected, cattle already affected and some few others died within a few days immediately after the rain.

As was expected, the early part of 1914 saw a recrudescence

of the complaint, although the intervening period had been practically free, and in March the district was visited again. This year mortality had not been so heavy, but was more widely diffused, the good lands, however, remaining quite free. The previous spring had been very good in the early parts and a splendid growth of grass resulted, but since then the season had been very dry and the grass, where it had not been eaten down, was extremely dry and crumbled to dust in the hand. Much more of the country was wire netted and the resulting benefit in netted areas was plainly visible. As usual, the mortality ceased on the fall of heavy rains in the latter end of March.

The state of affairs on the farms on which the principal investigations were carried out was as follows:—

Farm A.—Area, 350 acres. In 1913 stocked with forty cows, ten horses, and fifty sheep. Ten cows died. Cattle have shown depraved appetites for the last two years. They are grazed, as a rule, but a little green maize was fed lately and the severity of the complaint and mortality have since diminished. In 1914 losses were lighter. Not netted. No artificial fertilizer used.

Farm B.—Area, 706 acres. In 1913 stocked with eighty-five head of cattle besides horses. Thirteen cows died in 1913, nine died in 1912. Cattle grazed as a rule, but since feeding on green maize in addition severity and mortality have decreased. In one lot of cows fed principally on maize no deaths occurred. Depraved appetite noted during the past four years. In 1914 remedial measures were taken and the complaint was practically absent.

Farm C.—Area, 800 acres. Stocked in 1913 with 105 cattle besides horses. Lost in 1912 thirty head, in 1913 twelve head. Depraved appetite noticed for years and animals affected with osteomalacia for many years. This was one of the worst farms. In 1914, after netting and feeding, very little loss was experienced.

Farm D.—Area, 300 acres. Carries 100 head of cattle. In 1912 fifty head died. The farm was then netted, the cows fed to a fair extent on maize silage and a bone-meal lick provided. Crops were manured with bone-dust and the following year (1913) no cattle died. In 1914 no cattle were lost on the farm, but two turned out into the scrub died, so it is said, from this complaint.

XUM

This farm is right in the midst of the worst affected area, is of the same class of country, and, as can be seen, is heavily stocked.

Farm E.—In the midst of affected country. Cattle suffered from osteomalacia and had depraved appetites. Lost heavily in 1912. Then commenced to feed on a little bran and returned the skim-milk to the cows mixed with a little molasses as a drink. Lost none in 1913 or 1914. For sleekness of coat, healthiness of skin, brightness of eye, and appearance and general condition these cows compared most favourably with any seen. The depraved appetite had left them.

Many other similar histories could be quoted, but all follow one of the above examples, and it is to be noted that in practically every instance where disease was absent or less in 1913, 1914, or both, and was present in previous years, that some steps had been taken to render the food supply available for individual animals better than before. In some cases this was merely the result of previous mortality without re-stocking, whereby the farms became far less heavily stocked, but improvement in these cases was never of equal value to that observed where the holdings had been netted in and feed supplied.

Incidence.

As has already been pointed out, the mortality was markedly localized; it was also seasonal in that it has during the three past years occurred at the end of a dry summer. The cattle affected were in the vast majority of instances cows in full milk; in only a few cases, and those on areas of poor country where the mortality and severity of the disease were exceptionally great, were cattle other than milking cows attacked.

It must be noted that concurrent with the deterioration in pastures there has been a steady attempt, by the importation of Jersey bulls and in other ways, to increase the average milking capacity of the cattle.

The mortality was more especially confined to good milking cows. One instance was noted of a farm free from the disease, in the midst of affected ones and on similar country, the cows on which were notorious through the district as being "scrubbers" and of poor milking capacity, no effort being made by the farmer to improve the quality of his cattle.

Symptoms.

The cattle on the affected farms all suffer from a depraved appetite: the chew bones, sticks, and dead rabbits, lick up the rabbit dung, and eat indigestible and astringent plants. The coat is rather dry and harsh, the animal stands with a general dull, heavy appearance, and tucked up. Loss of condition is fairly rapid. Lactation ceases with some suddenness, rumination is partly or entirely suspended, appetite poor or absent. Bowels usually constipated, fæces being passed in small quantities, often with blood and mucus. Diarrhœa may be present at times. Evidence of dull abdominal pain may be noticed. The animals move stiffly; when down they rest on the sternum, but towards the end lie stretched out on one side. They are often unable to rise. The tongue is in most cases protruded and salivation generally marked, the muscles of mastication and deglutition being paralysed. The rumen is full and doughy, and whole alimentary tract markedly atonic. Tympanites not marked. Temperature varies from normal to 104° F.; breathing somewhat hurried and apt to be stertorous.

Death occurs in from twelve hours to a week or fortnight after symptoms are first observed, but in more than a few cases of reported sudden death careful inquiry revealed the fact that the animal in question had not been milking quite so well as usual for a day or two and was somewhat off colour. Cases lasting more than a few days present an unthrifty dull appearance, stiffness of motion, stand about picking occasionally at grass, ruminating but little, and fall off in condition. Recoveries are not common.

Post-mortem Appearances.

Generally speaking, these may be said to be inconstant and indefinite.

No lesions of the skin, subcutaneous tissues or musculature are observed beyond occasional bruising in parts, and slight œdema of connective tissues. The peritoneum may contain a somewhat excessive quantity of clear fluid, but it is not present in marked quantities. The liver may be slightly pale and the gall-bladder is usually very full, but contents normal.

The rumen is usually full, often with a somewhat dry felted mass of indigestible fibre, and there are always present foreign

substances, such as bones, sticks, bits of rabbit skin, rabbit dung, china, &c. The omasal contents vary, in long-standing cases being excessively dry, but in many other cases practically normal. The abomasum may be slightly or even markedly congested, and in a few cases there is some catarrhal enteritis. The small intestine is generally empty, the large intestine containing a normal amount of food often rather on the dry side. Mesenteric and other lymphatic glands somewhat œdematous at times. Kidneys normal. Thoracic and pelvic viscera normal. Carcase poor to fair, generally deficient in fat.

Etiology.

Before dealing with what would appear to be the essential cause of this mortality it may be as well to review other theories either held locally or suggested for similar mortalities elsewhere.

The theory of infection occurred naturally to the farmers, but would appear to be negatived for several reasons. The affected district is bounded on the west by the tablelands, on which the disease does not occur, and on the south by a large area of forest land. Very few cattle are introduced, though many are taken overland northwards; the affected areas are scattered throughout the district, although interchange of cattle is fairly general. Cattle on affected farms are often removed deliberately on to non-affected areas when mortality amongst such herds ceases and the cattle with which they are mixed do not contract the disease. Mortality ceases on the fall of rain and is apparently prevented by improvement in feeding. Bulls and steers and young stock, in the vast majority of cases, remain unaffected in affected herds.

Examinations of blood by the Bureau of Microbiology were negative.

The theory that the loss was due to the cattle picking up the poison baits laid for rabbits had wide support, but as neither the symptoms nor *post-mortem* appearances were those of phosphorous poisoning (phosphorus being the poison used), and mortality had occurred on farms where no poisoning had taken place, the idea may be dismissed.

Examination of the pastures failed to reveal the presence of any known poisonous plant, nor had the farmers observed any new or strange plant to be growing, whilst identification

of the commoner grasses and plants by Mr. J. H. Maiden, F.L.S., of the Botanical Department, showed that nothing suspicious was amongst them.

The possibility of a fungus on the grasses being implicated was considered, but the report of Mr. G. Darnell-Smith, B.Sc., Plant Pathologist, showed that on large mixed samples from affected and unaffected farms "no fungus parasite was found to be constantly present, and the fungi detected were for the most part saprophytic and such as one might expect to find on almost any pasture." Moreover, any present on affected farms were also present on unaffected ones.

He identified spores of Ascochyta, Fusarium, Septona, and Sphæropsis.

In investigating this mortality it could not but be noted how localized it was, and how markedly it coincided with those areas whereon "bone-chewing" and osteomalacia had previously been observed, whilst the experience of many farmers as to the results of feeding drew attention to the need for investigating the food supply.

It was known that soil analyses had been carried out throughout this district, and the following analyses are of interest:—

ANALYSES (TWO) OF GRANITE SOILS, BEGA DISTRICT, N.S.W.

Locality	Colour	Reaction	Water capacity per cent.	Capillary power	Clay per cent.	Lime CaO per cent.	Potash K_2O per cent.	Phosphoric acid P_2O_5 per cent.	Nitrogen N per cent.	Volatile per cent.
1. A .....N	Grey	Acid	35·5	6	34·5	0·225	0·023	0·070	0·154	8·20
2. P	Light Chocolate	,,	36·5	8	34·9	0·616	0·417	0·152	0·364	10·98
3. W.....	Grey	,,	36·0	6½	29·9	0·271	0·112	0·109	0·168	7·57
4. N	Light	,,	34·0	5	36·2	0·566	0·341	0·157	0·238	9·86
5. S.....	Grey	,,	23·0	3¾	44·5	0·118	0·101	0·070	0·126	5·52
6. D.....B	Dark	,,	41·5	8	30·0	0·340	0·314	0·140	0·196	8·40

In locality 5, corresponding with Farms C and D, mortality was very heavy; in locality 1, also corresponding to these farms, mortality was heavy; in locality 3 there was very little sickness; in 4 and 6 none whatever; whilst locality 5 was largely used as an area into which cattle from affected herds were taken to recover, and in this locality no disease was seen.

It will be observed how the mortality coincided with poverty of soil, especially of lime, phosphates and potash.

In order to note what influence this state of affairs might have on the actual feed samples of grasses were taken from

four affected farms and two unaffected, large bundles of mixed grasses being taken in each case.

Analyses (three) resulted as follows:—

Distinguishing marks	A1	A2	B1	B2	C1	C2
Moisture, per cent.	9·44	9·11	9·43	9·68	9·91	9·59
Ash, per cent.	6·41	13·0	10·62	10·82	10·9	9·37
Containing lime (CaO)	0·33	0·34	0·42	0·44	0·41	0·42
,, magnesia (MgO) ...	0·15	0·15	0·17	0·17	0·21	0·19
,, potash (K_2O)	1·02	0·72	0·93	1·05	1·48	1·53
Phosphoric acid (P_2O_5)	0·27	0·24	0·30	0·30	0·56	0·56
Silica (SiO_2)	3·97	10·55	8·03	8·06	7·35	5·55

Of these grasses A1 and A2, corresponding to localities 1 and 5 and Farms C and D, are from badly affected areas, where mortality was heavy; B1 and B2 corresponded with Farm A, where also mortality was heavy; C1 and C2 corresponded with localities 4 and 2 respectively, on which no mortality occurred.

If these analyses are studied it will be noted at once how the phosphoric acid content varies in the unaffected areas C1 and the affected A1 and 2, B1 and 2.

The principal grasses, as identified by the Government Botanist, Mr. J. H. Maiden, were:—

A1. *Festuca bromoides, F. ciliata, eragrostis sp.*

A2. *F. bromoides.*

B1. *Sorghum plumosum, F. bromoides.*

B2. *F. ciliata, Poa cæspitosa.*

C1. *F. myuros, F. ciliata, Bromus mollis, P. cæspitosa.*

C2. *F. myuros, F. ciliata, P. cæspitosa.*

There would thus appear to have been a definite connection (1) between soil poverty and food poverty, (2) between food poverty and the mortality.

The whole course of the disease is found to simulate very closely one form of the disease known as "lamziekte" in South Africa, and that known as "impaction paralysis" in Victoria and South Australia. The disease described by Robertson [4] would appear to answer almost exactly to these outbreaks. It has been argued by Theiler [5] that the disease as seen in South Africa is due to a toxin of vegetable origin, although many objections to this theory have been raised, more especially by Stead [6], whose arguments appear worthy of every consideration.

Juritz [7] has pointed out the importance of the absence of the organic compounds of phosphorus as a controlling factor in

the production of beriberi and polyneuritis, and suggests that the important deficiency may be that of nucleo-proteins, whilst Stead, in writing of lamziekte, says, "whether killed by sudden drought or frost, lamziekte grass is certainly most deficient in respect of P_2O_5 or substances which it manufactures by its acid, which substances are presumed to be of vital import to the animal." Further, in mentioning the possibility of a vitamine being concerned, he says that "milk contains a substance that possesses protective properties."

It has been shown that the amount of protective substance in rice is extremely small, and it can readily be understood that relatively small quantities of certain foodstuffs may be able to ward off other diseases due to deficiency. If it be assumed that milk contains the protective substances which can ward off the mortality, then the extraordinarily strong preventive value of returning relatively small quantities of skim milk to the cows, as was so markedly observed, can be explained, but it is difficult to explain on any other basis.

Theiler [8] asks "If something is missing, how can an animal recover after it has sickened without that something be supplied?" But it is noted, both in South Africa and here, that cessation of lactation is most marked, and consequently the valuable substances which were being passed on to the calf through the milk are retained for the use of the animal itself, for as Stead has well pointed out, the composition of milk is not affected by diet, so that the calf should not suffer at the expense of the mother. This received confirmation in one case during the outbreaks under review, wherein a large herd of cows, all suckling their calves, became affected and heavy mortality occurred, but on weaning mortality rapidly ceased.

Conclusions.

(1) There exists in an isolated district of New South Wales a disease closely simulating lamziekte and impaction paralysis.

(2) This disease is markedly associated with soil deficiency in lime and phosphate and subsequent food deficiency in phosphates.

(3) The disease occurs at the end of droughty periods in country much depreciated by rabbit infestation.

(4) The distribution of the mortality coincides with areas on

which "bone-chewing" and osteomalacia have been for some time present.

(5) Great benefit is obtained by feeding small quantities of nutritious food, and especially by returning skim milk to the cows.

(6) Milk probably contains a substance that possesses protective properties.

(7) The idea that a deficiency of phosphates is the ultimate cause, either directly or through want of substances containing them, of the diseases known as lamziekte and impaction paralysis would appear to be supported.

In submitting this report I must acknowledge the assistance received from the officers of the Department of Agriculture mentioned here, and more particularly from Mr. C. Furness, Inspector of Stock, Eden P.P. District, who was indefatigable in obtaining information, collecting material, and generally assisting in the investigations carried out.

REFERENCES.

[1] HENRY: "Osteomalacia in Cattle in New South Wales," *Agricultural Gazette of New South Wales*, October, 912.
[2] H. T. JENSEN, D.Sc., *Agricultural Gazette of New South Wales*, December 2, 1909
[3] I am indebted to Mr. F. Guthrie, F.I.C., for these analyses.
[4] *Agricultural Journal, Union of South Africa*, October, 1913.
[5] "Facts and Theories about Stijzikte and Lamziekte."
[6] "Some Chemical Reflections Concerning Lamziekte," *Agricultural Journal, Union of South Africa*, March, 1913.
[7] *Agricultural Journal, Union of South Africa*, November, 1913.
[8] *Ibid.*, July, 1912.

A REPORT UPON SOME CASES TREATED BY VACCINE THERAPY IN VETERINARY PRACTICE.

BY J. F. D. TUFT, M.R.C.V.S.
Winchester.

(*a*) AUTOGENOUS VACCINES.

(1) *Subject.*—Hunter mare.

Disease.—Open suppurating tendon sheath. *Micro-organisms present:* (1) *Staphylococcus pyogenes albus;* (2) an irregular streptococcus of uncertain species. Professor Annett, of the Runcorn Laboratories (Messrs. Evans, Lescher and Webb), prepared a vaccine from a swab of the material taken from this case, made up in six phials, each phial containing 1 c.c. (3,000 million of staphylococci, 2,000 million streptococci being in each phial).

1914.—May 2, initial dose, ½ c.c.; May 6, second dose, 1 c.c.; May 11, third dose, 1 c.c.; May 16, fourth dose, 1 c.c.; May 23, fifth dose, 1 c.c..

Result.—Complete recovery followed.

(2) *Subject.*—Cart horse used for town work in corn merchant's van.

Disease.—Chronic nasal discharge. *Organisms present:* (1)

Streptococcus brevis; (2) *Micrococcus catarrhalis;* (3) a club-shaped bacillus (probably *Bacillus septus*); (4) *Staphylococcus albus.* Dr. Annett prepared six phials from a swab of the discharge; each phial, as before, contained 1 c.c., and each contained 4,000 million organisms, made up of 1,000 million of each organism specified.

1914.—July 10, initial dose, ½ c.c.; July 28, second dose, 1 c.c.; August 10, third dose, 1 c.c.; August 17, fourth dose, 1 c.c.; August 24, fifth dose, 1 c.c.; August 31, sixth dose, 1 c.c.

Remarks and Result.—No appreciable improvement was noted until the third dose. The discharge gradually diminished after the third injection, and has not appeared since.

(3) *Subject.*—Cart horse used on farm.

Disease.—Chronic nasal discharge. *Organisms present:* (1) *B. coli;* (2) a diphtheroid bacillus; (3) *Staphylococcus albus.* Dr. Annett prepared a vaccine of these organisms, and, as before, sent six phials, each containing 1 c.c. (6,000 million organisms in each phial, being 2,000 million of each of the organisms specified above).

1914.—October 16, initial dose, ½ c.c.; October 23, second dose, 1 c.c.; October 30, third dose, 1 c.c.

No more injections were given, as the owner decided that the animal was not worth treating further, although an appreciable improvement was noted after the second injection. The turbinal bones of the right nostril were extensively diseased.

Stock Vaccines.

Although not considered so efficacious as autogenous vaccines, I have had most excellent results in using the hypodermic tablets prepared by Messrs. Parke, Davis and Co.

In a pamphlet issued by the Runcorn laboratories, the advantages and disadvantages of stock vaccines and autogenous vaccines are compared thus:—

A stock vaccine can be compounded of strains of organisms of proved immunizing properties, but failure is frequent. *An autogenous vaccine* gives the best guarantee that the antibacterial substance produced will be the most efficacious, therefore risk of failure is minimized.

Stock vaccines are less expensive. *Autogenous vaccines* are initially more costly, but a large quantity is prepared as easily as a small quantity, and hence a long course of treatment may prove less expensive than a course of stock vaccines.

A stock vaccine is immediately available for use in urgent cases, and is often available in cases where it is not possible to isolate the infective organisms directly for the preparation of an autogenous vaccine. *An autogenous vaccine* requires some time (thirty-six to forty-eight or more hours) for its preparation.

Stock vaccines deteriorate by keeping. *Autogenous vaccines* ensure freshness of preparation.

Stock vaccines are made from several different strains of organisms *presumed* to be the cause of the lesion—they are polyvalent—but still may lack the particular strain or variety of the

XUM

organism causing the lesion. *Autogenous vaccines* contain *the* organisms *concerned.*

This last point is perhaps the strongest in support of the superiority of autogenous to stock vaccines.

(1) *Subject.*—Pony used in trap and for children to ride.

Disease.—Fistulous withers (second year in succession).

Treatment.—Case was seen on November 21, 1914, the near side wither being very enlarged. I laid this freely open with the knife, and thoroughly curetted and cleansed the interior with weak Jeyes' fluid and water. Hypodermic injection of one tablet (Parke, Davis) of streptococcus vaccine (*streptococcus bacterin: S. pyogenes*), representing 100 million bacteria. The off-side wither was at this point quite normal. I make a note of this, as it will be seen later that this latterly became involved.

1914.—November 30, Two tablets (200 million) given hypodermically, discharge gradually diminishing; December 5, wound gradually healing; December 10, four tablets given, off wither assuming character of near; December 11, off-side wither opened and disinfected as in case of near; December 17, five tablets administered; December 21, going on well. Further dose of five tablets given; January 1, discharged cured.

Remarks.—In conjunction with vaccine treatment, ovules of vetiod were inserted every day (an ovule per day), and latterly perchloride of mercury points (Willows) one every other day.

Although the dose was gradually increased, I do not always follow this practice, very often starting with a large dose of 500 million organisms and with the same beneficial results.

(2) *Subject.*—Mare used in butcher's trap.

History.—Had recently had an attack of lymphangitis, and a *knowledgable* (?) farrier had bled from the foot; infection followed, and septic infection of the leg resulted.

Treatment.—December 11, 1914. The mare was in great pain. There was a nasty wound discharging pus to the inner side of the point of the hock of the near hind limb. Hypodermic injection of one tablet (100 million organims: Parke, Davis), streptococcus vaccine, and ½ oz. doses of potassium iodide three times a day in the drinking water. December 14.—Wound still discharging pus, with a secondary wound discharging pus and blood 3 in. below the point of the hock. Two tablets of vaccine given. Pot. iodide continued as before. December 18.—Appreciable diminishing of swelling of limb. Appetite good. Temperature normal (on the 11th it was 103° F., and on the 14th 102·8° F.). December 21.—Five tablets given; discharge diminishing from both wounds; second wound showed signs of healing. December 29.—Second wound healed, first wound gradually assuming a healthy appearance. January 1, 1915.—Wound granulating. Dusting powder applied d.p.d. January 4.—Wound cauterized to reduce "proud flesh." January 7.—Wound practically healed. January 12.—Discharged *cured.*

The value of vaccine treatment is undoubted. Few as are the cases recorded, I hope shortly to publish a more exhaustive list of cases treated by stock and other vaccines.

Clinical Articles.

LAMINITIS—THE VALUE OF READING AND A MORAL.

By G. MAYALL, M.R.C.V.S.
Bolton.

On November 10 I was called to see a bay horse of the van type, 7 years old, suffering from laminitis in the fore feet. I administered a laxative dose of aloes and had the shoes removed, the feet pared, and warm bran and linseed poultices put on. The horse was blowing, the respirations about 30 per minute, an anxious expression of the face, pulse 60, temperature not raised. On my visit next day the animal was easier generally, but the feet were very tender, and it was with difficulty that the horse could rise, and when he was up he shoved his fore feet out and almost fell on top of us if one of the fore feet was lifted up. I prescribed pot. nit. in ½ oz. doses, together with B.P. tincture of aconite 30 minims, three times daily.

After a week's treatment with laxatives, diuretics and febrifuges, and continuous poulticing and paring the soles of the feet thin, there was not any marked improvement in the case, but now large elevations of the skin, similar to those seen in cases of urticaria, developed about the croup and buttocks of the horse. At this time I changed the warm poultices to cold ones, administered a purgative dose of medicine, and ordered the application of lead and carbonate of potash liniment to the nettle-rash elevations.

Next day but one the blebs had disappeared, but the laminitic condition was no better. Briefly, poulticing and febrifuge medicine were continued until December 22, when the horse had improved slightly, but still seemed like a subject suffering from chronic laminitis. Thinking that there might be some rheumatic condition present I now began to administer large doses of acid aceto salicyl (3 drachms), but still no visible improvement occurred and I was beginning to fear I should have to adopt the adrenalin or pilocarpine treatment, or one of the other lines recommended, but all of which are objectionable from a contract point of view.

It was about at this time that I chanced to drop across a copy of the *American Journal of Veterinary Medicine* for October,

XUM

1914, and on p. 753 I saw and read a short notice on "Directions for the Alum Treatment for Laminitis." There it states: "Begin the alum by giving 2 oz. in a quart of water (it is really better for the horse to dilute it more than this) and repeat every two hours until a pound has been given. All medicinal treatment can ordinarily be discontinued at the end of the first twenty-four hours." Aconitine is also recommended. I decided that my patient should have treatment on these lines, but at once recognized that the dose of alum was about four times as much as the maximum dose given in the therapeutic text-books, and also that the horse would have to be drenched and that a quart of alum water every two hours was going to take a bit of getting down the horse, especially as, unfortunately, he was about the worst animal in the stud to drench. My patient, too, was not a big powerful cart-horse, but a rather small vanner. Having never heard of the treatment before and having no experience of it, I decided to go steady at first, and therefore had four draughts made up, containing in each draught sulphate of alum 1 oz., pot. nit. ½ oz., and B.P. tincture of aconite 15 minims. These draughts were given in a full pint of water within a space of twelve hours, and next day nobody could tell that the horse had ever had laminitis. He was shod with flat shoes, thick at the heels, and leathers, and he now does his work quite well. The treatment seems purely empirical and its physiological action is hard to explain. Dr. Douglas, of New Orleans, and Dr. Merrillat have both used it often enough in America to prove that its action in my case was not merely a coincidence.

The moral of the case for the veterinarian is: "Read all you can that bears on your professional work, how you can, when you can, and where you can," and occasionally remember Goldsmith's saying that "No nation gives greater encouragement to learning than we do; yet at the same time none is so injudicious in the application."

THE USE OF ARECOLIN IN THE HORSE.

By J. H. PARKER, M.R.C.V.S.
Faringdon.

I was called on the night of January 6 last to attend a pony. I found it suffering from tympanitic colic, much swollen in the abdomen, sweating, and in considerable pain. Temperature 103° F. I gave a hypodermic injection of 1 gr. of arecolin, but the only

action it had was to produce salivation. Telling the owner his pony was sure to die if we could not get the bowels to move, with his consent I gave another grain; in five minutes there was copious salivation, and the pony passed a lot of flatus and some fæces, and he was soon quite free from pain. I think the second dose saved his life. He was about 14.2 hands high.

ROARING DUE TO A TUMOUR PRESSING UPON THE TRACHEA.

By C. B. PERKINS.
Centerburg, Ohio.

Subject.—Colt born in May.

History.—Had a slight cough for some time after it was born and later developed a very decided case of roaring. When exercised would become almost exhausted and in some instances would fall down. Seemed to be growing worse.

Symptoms.—Temperature normal; pulse fast when exercised; respiration about 30. Had a very loud snoring or roaring which was unilateral.

Diagnosis.—I told the owner I did not know what the trouble was, but thought that there were nasal polypi, and asked for a consultant.

Dr. Clemmons, of Granville, Ohio, and Dr. W. G. Cliffe, of Upper Sandusky, who was the guest of Dr. Clemmons, were called in consultation. Dr. Clemmons held to the idea of laryngeal paraplegia, Dr. Cliffe to pressure on the trachea, and I to polypi.

Treatment.—Dr. Clemmons began the roaring operation, and when the larynx was opened it was found to be perfectly normal, and the roaring was as bad as ever or even worse.

Autopsy.—Three weeks later the colt died. On *post-mortem* examination I found a tumour on the dorsal surface of the trachea and ventral surface of the longus colli just anterior to the first rib and a little to the right of the median line.

The trachea showed a marked inflammation of the mucous lining for a distance of 12 in. anteriorly and to the bifurcation of the bronchi posteriorly, and the rings for about 6 in. either way were collapsed; the lumen of the trachea being about ½ in. in diameter. Death evidently resulted from suffocation.

XUM

Canine Clinicals.

ŒSOPHAGEAL OBSTRUCTION IN A DOG.

By J. H. PARKER, M.R.C.V.S.
Faringdon.

Subject.—A two-year-old fox terrier sent to be destroyed. It had not been able to take any food since eating a rabbit's head a week previously. When I saw it it was retching, and showed undoubted symptoms of œsophageal obstruction. I suggested passing a probang, but the owner preferred to have it destroyed, which we did by injecting about a drachm of chloroform up the nostril. A *post-mortem* showed part of a rabbit's head, superior and premaxilla, with sharp spicules embedded in the walls of the œsophagus just inside the thorax.

IMPACTION OF THE PYLORUS AND BOWELS IN THE DOG.

By G. MAVALL, M.R.C.V.S.
Bolton.

(1) On October 2 a well-bred Clumber spaniel was brought to me suffering from diarrhœa. The owner, who had only possessed him a short time, said that he was an extremely timid and nervous dog, and truly he appeared to be so, for he quivered when spoken to, and cowered about in his apartment like a dog that had been well thrashed most of his life. I gave him a pill containing 2 gr. of calomel, and next morning there was a watery stool of good colour. Astringent medicine in the shape of ext. hæmatox., 1½ gr.; pulv. creta aromat, 4½ gr., was now given twice daily, and at the end of three days the dog was eating fairly well, and fæces almost natural in consistence. After improving in condition for about a week the diarrhœa started again, the dog went completely off his food, and champing of the jaws was very noticeable. This last condition continued for a week, the dog eating very little, but drinking soup and milk occasionally. The bowels became set again, but did not act at all freely. Briefly, the dog got into such a thin and wretched state that he was destroyed with the owner's consent on October 17. On *post-mortem* the only noticeable thing found was impaction of the pyloric orifice, with a piece of straw bent into five folds. The

stomach walls were thin, and the mucosa pale and anæmic. The champing of the jaws, which was very noticeable and at times continuous, was evidently a reflex act due to the irritation of the impacted mass of straw.

(2) We are often called to cattle here in the autumn of the year which suffer from impaction of the fore stomachs with dry fibrous grass, but until this year I have never suspected that dogs might suffer from a somewhat similar cause. On November 4 a gentleman brought a fox terrier to me that I had previously treated on two occasions for worms. He seemed rather annoyed that these should occur again, but I told him that the dog which often picked up refuse might easily reinfect himself. I gave the subject a full dose of oil of male shield fern, and kept him at the infirmary for a week. On the second day, as his bowels had not acted, I gave him a dose of calomel. On the third day, there still being no fæces, I gave him an enema of glycerine and warm water, and within a quarter of an hour he passed half a teacupful of felted, impacted fibrous grass.

(3) A fox terrier previously treated for worms came in on December 10 with the announcement that he had worms again. I gave him the same treatment as in Case 2, and on the third day he passed an eggcupful of firmly impacted decayed grass.

Both these dogs recovered and have been well since. Both of them were in the habit of going into their owners' back gardens and eating plentifully of the grass. Both the owners were shown the stuff the dogs parted with, and both were satisfied.

There is a popular idea that eating green grass does dogs good. In these cases the grass was fibrous, dead, and innutritious, and caused impaction of the bowels in the dogs. The owners had evidently mistaken occasional blades of grass that had been parted with for tapeworms.

VAGINAL TUMOUR IN A BITCH.

By G. MAYALL, M.R.C.V.S.

In December a fox terrier bitch, brought to me bleeding and discharging at the vulva, was found on examination to be suffering from a vaginal tumour. The growth was painted, injected with "anæsthene" (Wyley's, Ltd.), and ligatured tightly with silk, care being taken not to include the urethral orifice, and cut off with the scissors at the back of the ligature. The ligature came away the third day, and the vagina was injected daily alternately with alum solution and witch hazel. After a fortnight's

XUM

injections there was still some hæmorrhage and glairy discharge from the vulva, and I could feel a pit in the wall of the vagina, to which I traced the hæmorrhage. Having read of a new styptic (adrenalin not having been very satisfactory with me) called "Coagulen" formerly, and now "Euclottin," I wrote to the Saccharin Corporation, Ltd., 36 and 37 Queen Street, London, E.C., for a small bottle, and having obtained same and mixed it as directed with water, I packed the vagina on two occasions with cotton-wool soaked in the solution. All blood and discharge ceased after two applications, and the bitch went away quite cured at the end of the third week. The tumour removed seemed to be a fibro-lipoma, weighed 2 dr., and was as large as a walnut.

Euclottin is a powerful styptic, non-irritant and non-toxic. It hastens coagulation and clot formation in hæmorrhage and hæmophilia. It has been largely and successfully used by Professor Kocher and Dr. Fonio, of Berne. It is prepared from blood residues, and is free from inorganic salts.

"Clinical experiences with hæmostatics are now being supplied to the medical profession with some freedom," and in the *Lancet* for April 4 and 11, 1914, there are two notes on the subject.

VETERINARY MATTERS IN BRITISH GUIANA.

The destruction of a mare suffering from advanced glanders was reported. The animal had been discovered on the public road, but through the neglect of the Board's officer the owner had been only reprimanded when a much severer penalty should have been imposed.

A disease which had recently broken out amongst mules on a number of the Berbice sugar estates was then discussed. Professor Harrison told the members that it was at first thought to be cerebro-spinal meningitis, but as considerable dissatisfaction was displayed in certain quarters at this diagnosis they were obliged to obtain the services of the Assistant Government Bacteriologist to investigate the disease.

This officer succeeded in obtaining almost identical results as Captain Farrant, the well-known Berbice veterinary authority, and eventually both were unanimous in diagnosing it as mal de Caderas, a South American equine disease.

The disease had been added to the list of contagious diseases, and certain areas had been declared to be infected.

A letter had been drafted dealing with the disease, which would be sent to all concerned, and posters would be exhibited in conspicuous places.

A vote of thanks to Captain Farrant and the Assistant Government Bacteriologist for their services was then carried, and also to the Surgeon-General for allowing the Board the bacteriologist's services.

The annual inspection of the Experimental Fields was fixed for Monday, October 13, at 2 p.m.—*Journal of the Board of Agriculture*, British Guiana.

XUM

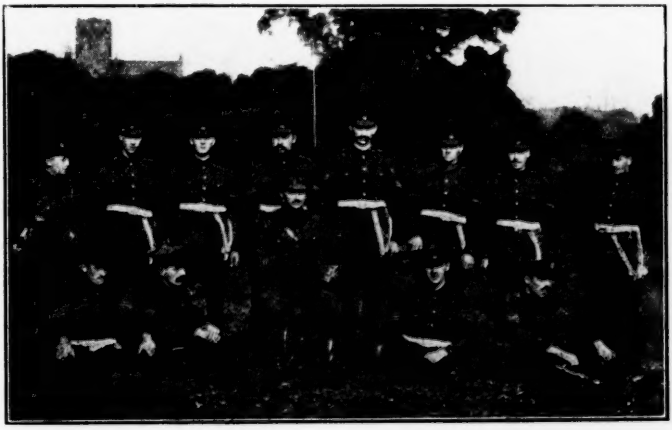
The Veterinary Profession and the War.

A MOBILE VETERINARY SECTION (EXPEDITIONARY FORCE).

THE formation of a Mobile Veterinary Section is as follows:—

One captain, four sergeants, one corporal, one shoeing smith, four privates, two batmen, one driver (A.S.C. first line transport), a number of "horse leaders" as required for dealing with droves of horses.

The functions of an M.V.S. are to follow the fighting line as



Mobile Veterinary Section, 3rd Brigade, 2nd Mounted Division, 2nd London Division.

near as possible and to clear the evacuation zone of wounded, riderless, and stray horses and administer first aid treatment. Then they check horse wastage as far as possible on the spot. These collected horses are taken to the nearest railway or placed in charge of civilian drivers, and conveyed to the nearest temporary veterinary hospital on the lines of communication for treatment and classification. All men of the M.V.S. must, of course, be good horsemen, and are provided with a complete veterinary wallet containing first aid drugs and instruments, and carry rifles for their protection.

XUM

MOBILE VETERINARY SECTIONS.

(1) MOBILE veterinary sections are line of communication units. The personnel is laid down in war establishments. Their function is to relieve field units of all sick and inefficient animals and convey them through the evacuation zone to a convenient railhead for despatch to the veterinary hospitals on the line of communication.

(2) One is mobilized for each division and cavalry brigade of the field army. They are the connecting link between the field troops and the veterinary hospitals, and the efficient evacuation of horse casualties from the field army depends upon them.

(3) In the collecting zone sick and inefficient animals are transferred to mobile sections at collecting stations, the location of which are usually at the discretion of divisional or other commanders; but orders as to their location may be issued by general or Army headquarters, which control the movements of mobile sections whilst in areas beyond the jurisdiction of the I.G.C.

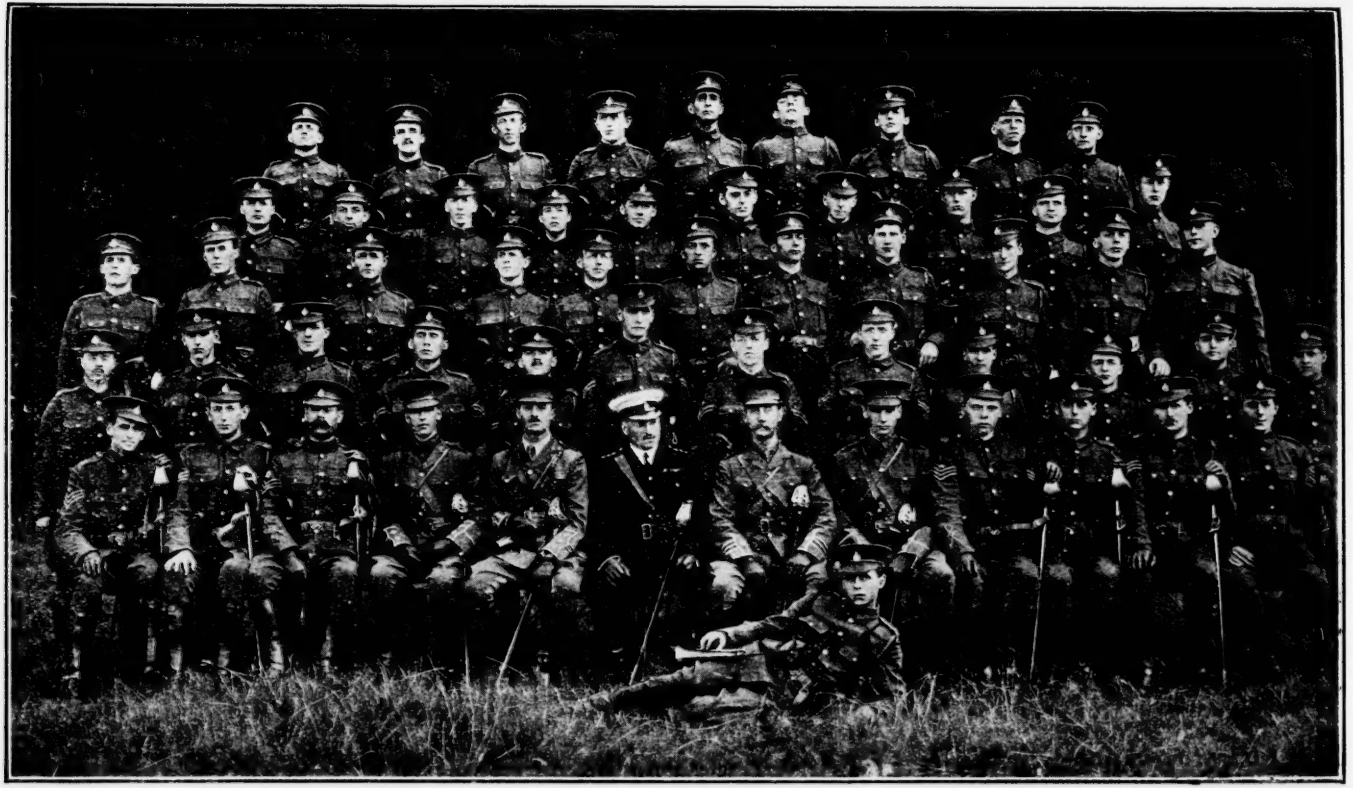
(4) After taking over sick animals, a mobile section proceeds to railhead with as little delay as is consistent with the well-being of the animals in its charge.

(5) Local labour is obtained to render any necessary assistance as horse leaders in conducting animals to railhead, unless the services of dismounted men proceeding thereto can be utilized. On arrival at railhead horses are entrained and despatched to the nearest veterinary hospital.

(6) When an unusual number of animal casualties is anticipated, the I.G.C. is at once notified to enable arrangements to be made for their reception.

EXTRACT FROM THE LETTER OF A VETERINARY OFFICER IN A HOSPITAL IN FRANCE.

THIS camping ground is a great improvement from what we had at the two other places. It is a large brickfield about seven or eight acres, which had to be shut down some weeks ago on account of scarcity of labour and dearness of coal. The sheds for the horses are what are used in one of the processes of drying the bricks and make excellent shelter. Down the centre of these



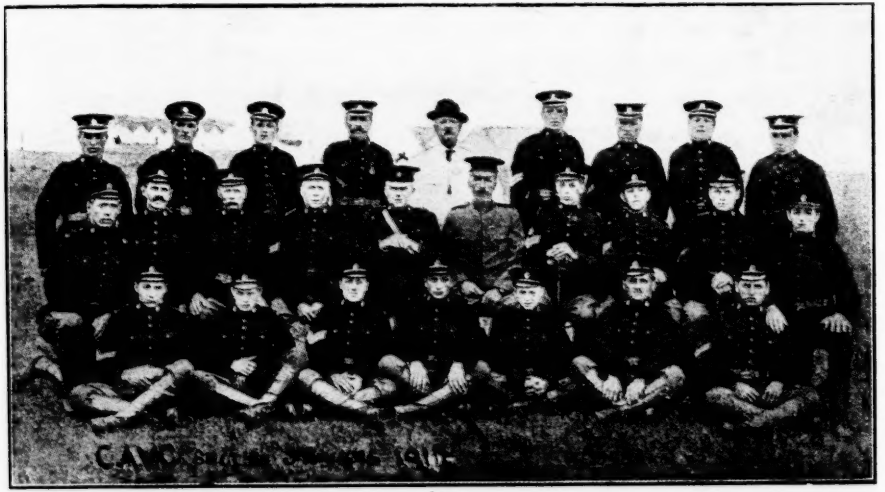
The Royal (Dick) Veterinary College Contingent, Officers' Training Corps, Rushmoor Camp, Aldershot, July, 1914.

(measuring over 100 yards long) mangers were made, and horses stand on either side, holding in each shed over 140 horses. The roofing is tile and a sandy floor. In all we can accommodate 1,000 horses in such sheds. At a farm close by there is a lot of good stabling and loose boxes. These have also been taken and will accommodate about 100. A small paddock adjoining this farm is also included. To this place our worst cases are sent.

These brick works have proved most accommodating for our requirements without having to do much building. At end of sheds for horses is a large fine shed with a dug-out pit about 2 ft. deep with tiled bottom, and measuring 24 ft. by 12 ft., used in making clay for bricks. This pit is used as a place for our casting-bed for horses for operation and does splendidly. We have a large tarpaulin filled with a thick bed of straw, which fits the pit and can be taken out when not required, and the pit made use of for standing horses in to dress. Besides casting-bed the shed can accommodate another five or six horses comfortably to dress. The shed was well cleaned out, lime-washed, a good-sized table fitted in, thus making shed look quite smart and nice. I am *chief* of this part of our hospital. My skin cases were taken over by No. 5 Section when we left the other place, and in coming here our C.O. put me as officer in charge of operation shed. I was pleased to get that work; there are heaps to do, but I do not mind that. Your continual drumming into me to get a good-sized dependent opening and give good drainage and not be afraid to use the knife stands me in good stead now. We are well equipped for surgical work. Get a good few quittor cases, and I am not losing the opportunity to try and improve myself. Also get a big number of awful bad withers. Then, of course, there is the steady stream of wounded from bullet and shrapnel (chiefly shrapnel), although during past few weeks there has not been so many of these coming down.

Well, to go on with remainder of building given over to our use, there is a fine laboratory, which the proprietor also kindly cleared out and gave over to be used as surgery.

His forge, which is quite a decent size, he also handed over, and which suits requirements of section A1, also several other sheds. The men have been made very comfortable, too; two large barns (used in process of drying tiles) were cleared out of all tiles and make excellent sleeping places. Then another big



Canadian Veterinarians enlisted for the European War.

Reproduced from the "American Journal of Veterinary Medicine."

shed serves as a dining place for them. We have now nearly 340 men.

Our own riding horses—eight in number—are stabled in his own private stables.

I am afraid I shall be tiring you with so much about self, but I thought it might interest you to know what sort of place we were camped in. The proprietor has been exceedingly good in doing all he could to help us, and specially to make men and horses comfortable.

Eight days after we left other camp two German airmen flew over and dropped several bombs, two actually dropping on place where our camp had been, but no damage was done, as none of them exploded. Several flew over while we were there, but this was the first time any bombs were dropped.

By the way, do you remember I told you last time I wrote that someone from Board of Agriculture was coming round? It was Dr. McCall, of Ricky, who came, and I had a chat with him for a short time.

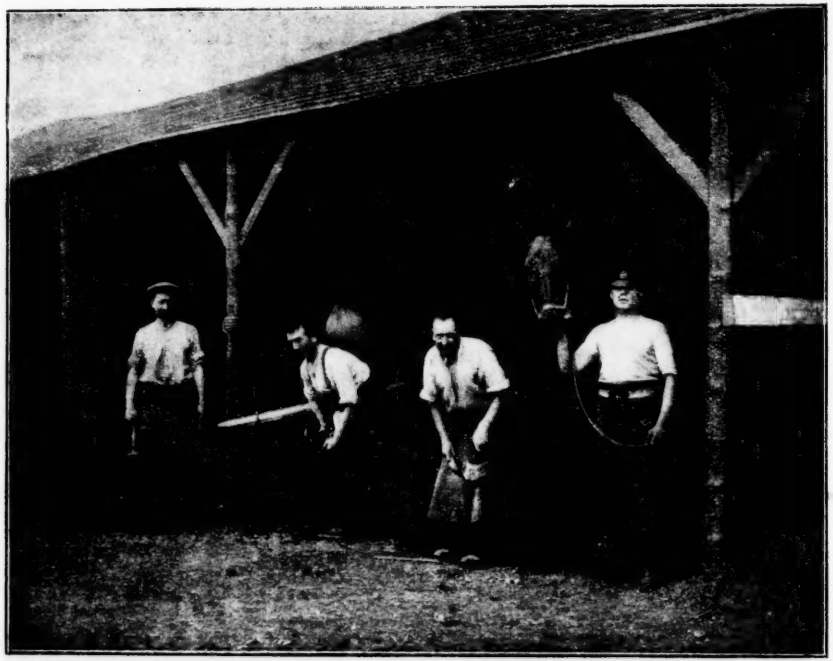
And how is the work going with yourself? Having many very tiring days, I expect. It is nice having this Mr. Craig near you. He will be able to relieve you for a few hours occasionally when you want off. What a clearance of troops there will be throughout the British Isles between now and end of March. It is to be hoped that after that their pressure will be felt on German lines.

Many thanks for offering to send papers, but we are well off for getting English papers here. If at any time there is anything of special interest in THE VETERINARY JOURNAL I'll be most grateful to you if you will send it on. I expect articles to it are very scanty now.

Well, I must conclude and go round my tour of duty.

THE AMBULANCE DOG (*LE CHIEN SANITAIRE*).

AN able article penned by Méd.-Major Bichelonne and Captain Tolet appears on the above in the *Archives de Médecine et Pharmacie militaires* for June, 1914. The article deals with the history of the movement, the *rôle* that these dogs will play in war, how they should be trained, and the class of animal to be selected for this special education.



Army Farriers at Work.

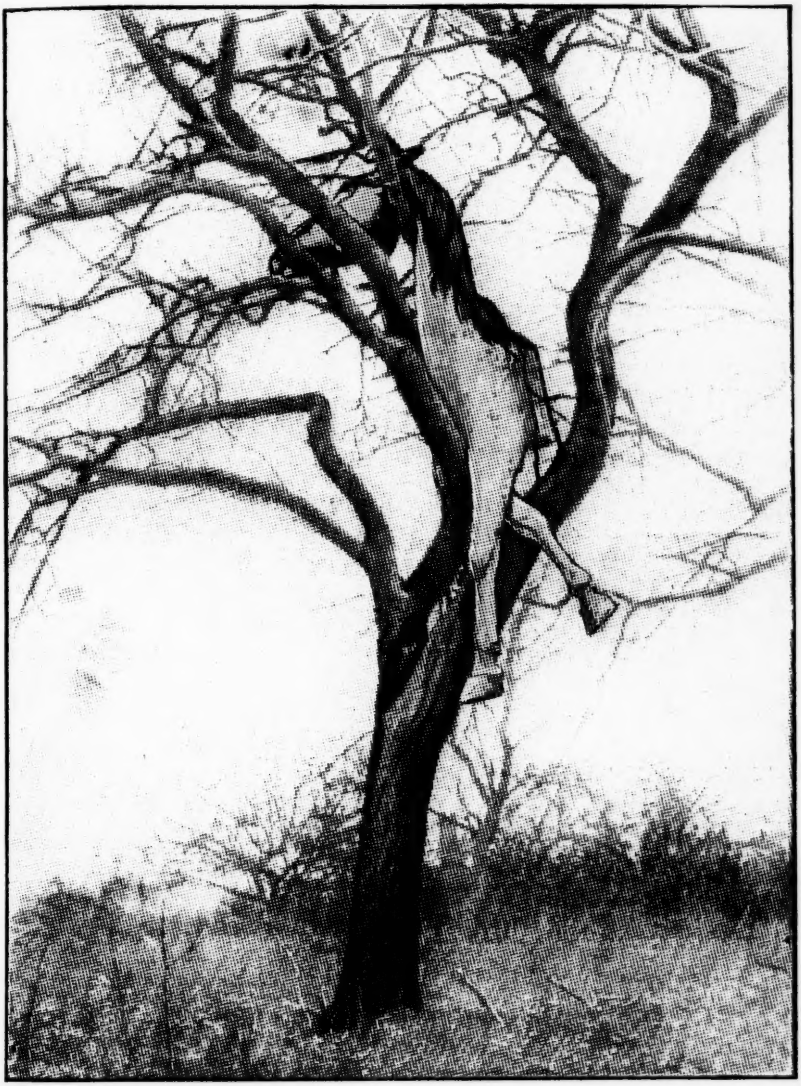
The writers enlarge on the difficulties that the stretcher-bearer will have to contend with in modern wars; his work will to a large extent be carried out at night and it will often be very difficult to work with lights. They quote Motais, who maintains that in recent wars one-third of the men reported as missing must be counted among the dead.

The ambulance dog has had most success in the German Army, where there are said to be about 2,000 trained dogs registered for mobilization purposes. The ambulance dog has received official recognition in France and four to six of these trained animals will be allotted to each bearer company on mobilization. There are at present about fifty trained dogs and another fifty in training. A non-commissioned officer of the medical corps from each army corps is sent to Fontainebleau every year to the military dog-training school to learn how to look after these animals and how to train them. The course lasts three weeks.

A national society called the *Société Nationale du chien sanitaire* has been formed to provide for the training of dogs, and it already has several branches in France. Some of the voluntary aid societies are also interested in the matter.

With regard to training the article discusses three methods: The dog is trained (1) to bark when a wounded man has been found, or (2) to return to the stretcher-bearer after finding a wounded man and then bark, or (3) to bring back something belonging to the wounded man. The last method appears to be the best.

The employment of the ambulance dog on the battlefield would be on the following plan: The stretcher-bearers first skirmish over the ground and collect all the wounded that they can see. They then return with the dogs and go over all the likely places to which wounded men may have crawled to get into cover. This is the scheme for working during the day. The search must be done systematically, and each group with their dog must work over a definite area. The dog works from side to side, follows the scent, and when it finds a wounded man it brings back his cap or handkerchief to the stretcher-bearer. The leash is placed on the dog and the stretcher-bearer is led to the patient. The dog will probably work better at night, but the stretcher-bearer's task will be no light one.



French troops have often noticed the remarkable effect of the fire of their famous "75" guns. Sometimes, after territory has been won back from the Germans, it has been possible to confirm observations made from French lines. Our photograph shows a curious instance where half the body of a horse was found in a tree, having been projected there from a distance of 230 yards by a shell from a French "75" gun.

Reproduced by the courtesy of "Reynolds's Newspaper."

XUM

The training of the dog should be undertaken when it is 5 or 6 months old; it is taken out on a leash and taught obedience. The dog is also allowed to run loose, and should be frequently called to heel. When a dog is called never go to him, always make him come to you. Training to "fetch" requires a lot of patience. The animal is first taught to "take" and "give"; the length of time it has to hold things in its mouth is gradually increased. It is then taught to "fetch," and it must not be allowed to drop things. When out walking the animal should be made to carry various things in its mouth. It should also be taught to jump over obstacles and to take to water.

The second part of the training should not be undertaken until the dog is well disciplined and "fetches" to order. He then receives instruction on the dummy, and then with men lying concealed on the ground. He is taught to search the pockets for loose objects such as a handkerchief in case the wounded man has lost his cap. It requires a lot of patience to teach the dog to return to the wounded man after bringing back the cap or handkerchief; endeavours have to be made to let the dog see what is required of him, and one way of doing this is to make him carry the cap on the way back to the patient for the first few lessons and also not to put him on the chain. When this lesson has been mastered some night practices are undertaken.

The dog is then taught to look for a certain number of men placed in a certain order and it must find them again in the same order. The work is gradually extended over a distance of several kilometres. The dog must also be accustomed to march with infantry and to work with stretcher-squads, and it must be accustomed to infantry and artillery fire. As a rule this presents no great difficulties. A dog may be considered well trained when, having found his master lying out as a wounded man, he returns without hesitation to bring back assistance.

The article concludes with some interesting notes on the various breeds of dogs which have been trained for this purpose in different countries.—J. V. F., *Journal of the Royal Army Medical Corps*, October, 1914.

POINTS OF A CAVALRY HORSE.

SPECIFICATIONS for horses and mules issued by the office of the Quartermaster-General, United States Army, contain the information desired. The general description for horses would take the place of the score card. Under special description for mature cavalry horses we find the following: —

"The mature horse must be sound, well bred, of a superior class, and have quality; gentle and of a kind disposition; well broken to the saddle, with light and elastic mouth, easy gaits, and free and prompt action at the walk, trot, and gallop; free from vicious habits, without material blemish or defect. A gelding of specified colour (no white or gray horses will be accepted), in good condition; from 5 to 8 years old at time of purchase; weighing from 950 to 1,100 lb., depending on height, which should be from 15 to 15¾ hands, and otherwise to conform to general description for horses."

Under description for young horses for cavalry we find the following: —

"The young horse must be sound, well bred, of a superior class, and have quality; gentle, free from vicious habits, and of a kind disposition, broken to halter, with free and prompt action at the walk, trot, and gallop; without material blemish or defect, and otherwise conform to general description for horses, and also to the following special requirements: A mare or gelding of specified colour in good health and fair condition. Mares will be purchased only when exceptionally fine individuals, and then by special authority. Two-year-olds: Minimum height, 14¾ hands; minimum weight, in flesh, 750 lb. No two-year-olds will be purchased except when specially authorized. Three-year-olds: Minimum height, 15 hands; minimum weight, in flesh, 850 lb. Four-year-olds: Minimum height, 15 hands; minimum weight, 900 lb. Weight depending upon height."—*Breeders' Gazette.*

XUM

Municipal Veterinary Medicine.

COUNTY BOROUGH OF BLACKBURN.

Abstract of the Annual Report of Medical Officer of Health, 1913.

The Milk Supply.

No article of food takes so important a place in our dietary, especially during the early years of life, as milk; and yet none under present conditions is a more possible source of disease. The germs of tuberculosis, infantile diarrhœa, scarlet and typhoid fevers may all be carried in milk, which at the same time forms an excellent medium wherein they can grow and multiply.

No article of food, therefore, requires greater care in its collection, distribution, and storage; but, unfortunately, it is very difficult to alter the practice of past generations and induce those concerned in the milk business to appreciate the need for those special precautions which modern science has shown to be necessary.

The Dairies, Cowsheds and Milkshops Orders, 1885-1899, give local authorities a certain amount of control over the sanitary condition of the cowsheds within their own respective districts, and a few progressive authorities, including Blackburn, have obtained special powers in local Acts of Parliament to deal with tuberculous milk supplied within their districts, whether coming from farms within or without their districts.

The Tuberculosis Order, 1913, which came into force on May 1 of that year, requires the notification of any cow having a tuberculous udder or an udder which is indurated or otherwise diseased, and of any bovine animal which is or appears to be suffering from tuberculosis with emaciation. The Order also enjoins the inspection of the cattle on the farm in question by a veterinary officer and the slaughter of any diseased animal, compensation being paid to the owner according to the agreed value of the animal and the stage of the disease.

By the frequent systematic inspection of the dairy cattle by the veterinary inspector the milk supplied from farms within this borough is kept for the most part free from the germs of tuberculosis; but a higher standard of cleanliness as regards the

shippons, cows, and milkers, and greater attention on the part of farmers to abnormal udder conditions, are often greatly to be desired. A further advance would also be made towards a pure milk supply if milk were cooled immediately after its collection and adequately protected from contamination during its distribution.

There is no doubt that the present method of ladling out the milk from open cans in the dusty street is open to criticism.

Reference must also be made to the retail milkshop and to storage at the home.

At the retail milkshop there is very often opportunity for the further contamination of the milk, but in Blackburn the milk is taken, as a rule, in the farmer's cart direct to the consumer's house, and only a small proportion passes through the retail milkshop.

Finally, there is the storage at the home, and the education of the people in the need for greater cleanliness as regards food generally, and especially milk, together with the provision of improved accommodation for the storage of food, can alone solve this part of the problem.

Were it not for the increased cost of the method, the distribution of milk, after cooling, in small stoppered bottles, containing the varying quantities required by the various householders, would probably be the most hygienic course.

A considerable part, however, of a town's milk supply, and in many instances by far the greater part, comes from dairy farms situated outside the town's jurisdiction, and, as the extent to which the Orders above referred to are put into operation in any district depends in a large degree on local inclination, there is no guarantee in any instance that the milk which is brought into the town comes from herds which have been thoroughly inspected.

It is generally held that fresh untreated milk, provided it is free from harmful germs, has definite advantages over sterilized milk, especially as a food for infants and young children, and it is therefore most essential that milk is so safeguarded from dirt and disease germs that it can be given to children with safety unsterilized. Under present conditions, however, it is far the safer course to boil all milk that is given to children.

The approximate number of cows housed within the borough is 1,300.

XUM

The approximate number of cows supplying milk to the borough from farms situated in outside districts is 3,750.

Samples have been taken regularly from the milk brought into the borough from the surrounding districts, and have been submitted to bacteriological examination for tubercle bacilli, and of the 57 milk supplies examined, 3 were found to contain tubercle bacilli.

The farms supplying infected milk were visited by the veterinary inspector and the herds examined. Further samples of milk were taken from any cows giving evidence of tuberculosis and, if the bacteriological examination of any sample confirmed the presence of the disease, the farmer was ordered to isolate the cow from the herd and to cease sending the milk from that cow into the borough.

At the same time the case was reported to the County authority under the Tuberculosis Order, 1913.

The farms situated within the borough have been regularly visited by the veterinary inspector and the herds examined, special samples being taken from any cows showing any evidence of udder disease or of general tuberculosis.

The cowsheds and dairies were also inspected as to their general sanitary condition.

During the year 201 visits were paid to farms by the veterinary inspector, and 3,981 examinations of cows were made.

Eleven cows were found suffering from tuberculosis of the udder, 7 being on six farms outside the borough, and 4 on four farms within the borough.

Of the 4 cases occurring in the borough, 1 was notified by the owner, 1 by the veterinary surgeon in attendance, and the other 2 were found during the routine inspection of the veterinary inspector.

Of the cows examined on the dairy farms within the borough, 15 showed definite abnormal conditions of the udder, 4 being due to tuberculosis and 11 to non-tubercular mastitis.

Under the Tuberculosis Order, 1913, 3 cases of suspected tuberculosis of the udder were notified, 1 by the owner and 2 by a veterinary surgeon. One of the latter 2 cases was found not to be due to tuberculosis.

Six cases of "tuberculosis with emaciation" were dealt with. Two were reported by owners, 2 by the veterinary surgeon in

attendance, and 1 was found by the veterinary inspector during his routine inspection.

The remaining case was reported by the medical officer of health of a neighbouring authority as having been removed from his district and being about to pass through Blackburn.

The man in possession was prosecuted and fined 20s. and costs.

Meat Inspection.

Mr. Burndred took up his duties as veterinary inspector at the end of April, Mr. Hayhurst, his predecessor in office, having been appointed Superintendent of the Islington Cattle Market.

Meat inspection is carried out by the veterinary inspector, who is the Chief Meat Inspector, and by the Assistant Meat Inspector.

The total number of carcases destroyed shows a decrease of 37 carcases when compared with the number destroyed during 1912.

The following are the figures relating to condemned carcases during the last five years:—

	1909	1910	1911	1912	1913
Beef ...	88	70	72	66	75
Mutton ...	110	114	100½	77	61
Veal ...	65	27	64	64	51
Pork ...	51	43	32	38	21
Goats ...	1	2	1	—	—

A total number of 13,229 beasts, calves, and pigs were slaughtered during 1913, of which 307 were tuberculous, or a percentage of 2·32.

There has thus been for the most part a progressive diminution in the amount of tuberculosis amongst the animals slaughtered at the Blackburn Abattoir, but this does not necessarily indicate a general diminution of the disease in this country.

Tuberculosis was not present in any sheep out of a total number of 49,979 sheep slaughtered.

Of the above-named 307 tuberculous carcases, 55, or 17·9 per cent., were totally rejected; 208, or 6·77 per cent., were cows, and 42 of these, or 20·2 per cent., were rejected.

Three hundred and two of the 307 tuberculous animals were affected with tuberculosis of the lungs.

Twenty of the 29 tuberculous udders were found in 2,723 cows slaughtered in the abattoir, or 0·73 per cent.

The remaining 9 were from cows condemned for tuberculosis of the udder.

Eleven of these 29 cows were giving milk on the day of slaughter.

Milk from 10 of these cows was sold in Blackburn, but in only 4 cases did the cows come from farms situated within the borough.

Regarding the extent of the tuberculous process in these 29 cows, 13 exhibited the disease so extensively that they were totally rejected for human food.

During 1913, 2 private slaughter-houses were closed.

There are now 10 private slaughter-houses in Blackburn.

During 1913, 1,868 diseased carcases were examined at the public abattoir and private slaughter-houses in the borough, 208 of which were rejected and destroyed as unfit for human food. Compared with last year, this return shows a decrease of 6 diseased carcases.

During the year 11,690½ lb. of unsound meat, 544 rabbits, and a large quantity of fish were also destroyed. Compared with last year, this return shows an increase of 5,884½ lb. of meat and a decrease of 21 rabbits.

The total weight of the rejected carcases, organs, meat, &c. (excluding fish) destroyed during the year was 44 tons 16 cwt.

The number of diseased animals is greatly augmented by the presence of distoma in the liver of cattle and sheep, which necessitates the rejection of that organ.

Report of the Veterinary Inspector under Diseases of Animals Acts and Orders for the Year 1913.

The borough is in an enviable position as regards the scheduled diseases, the only diseases occurring being parasitic mange (1 case) and tuberculosis.

Anthrax.

Two cases of anthrax were brought from outlying districts to a knacker-yard in the borough.

During the year I made microscopical examinations of blood, &c., from the carcases of 5 beasts, 22 sheep, and 1 pig, and found anthrax bacilli in two cases. In both cases the Chief Veterinary Officer of the Board of Agriculture confirmed the diagnosis.

The Board of Agriculture returns for 1913 show that during

the year 594 outbreaks of anthrax, confirmed by the veterinary officers of the Board, occurred in Great Britain, in which 652 animals were affected.

Glanders and Farcy.

One case of this disease was reported, but was not confirmed.

Sheep Scab.

The approximate number of fat sheep brought into Blackburn during the year was 49,979, and the number of store sheep exhibited for sale in the cattle market was 358. No case of sheep scab was reported or detected amongst them. Five sheep were dipped.

Foot-and-mouth Disease.

No cases occurred in the borough during the year.

Parasitic Mange.

One case of this disease occurred in a horse which had been brought into the district a fortnight previously. It was isolated until cured.

Tuberculosis.

Four cases of tuberculosis of the udder, and 6 cases of tuberculosis with emaciation were dealt with under the Tuberculosis Order, 1913.

Cattle Market.

The Cattle Market has been regularly cleansed and disinfected in accordance with the provisions of the Markets and Sales Order of 1910, after each of the two markets held weekly.

Visits and Inspections.

To the Cattle and Pig Markets	207
To the Railway Cattle Siding	99
To the Irish Pig Pens	49
Total	355

ERNEST J. BURNDRED, M.R.C.V.S., D.V.H.,
Veterinary Inspector.

LIVE STOCK AND FEEDING STUFFS.

Factors Controlling Fertility in Animals.

An investigation was held to throw further light on certain of the factors which limit the fertility of domestic animals. The animals examined were rabbits, pigs, and a bitch.

It was found that various circumstances, the chief being the the age of the animal, control the number of ova shed at each heat period. The data obtained showed that the low fertility of young as compared with adult sows is due to the fact that not so many ova are shed at each period.

Counts were made of the number of corpora lutea present in the ovaries and the number of fœtuses present in the uteri of pregnant rabbits and pigs, and the results showed that many more ova are shed at the heat period than young are produced at birth. Some ova possibly may be lost, but many ova, after being fertilized, atrophy or wither at some period of their development, and undergo absorption in the uterus.

While the occurrence of atrophic fœtuses only causes reduced fertility in animals which have many young at birth, their occurrence in the case of animals producing only one young would give rise to sterility, so that the problem of the cause of the atrophy becomes an important one.

It appears that the atrophy is not bacterial in origin, since frequently healthy and atrophic fœtuses lie side by side in the uterus. Moreover, no bacteria could be found either in the fœtus or fœtal membranes.

A number of fœtal rabbits and pigs were weighed, and the results showed that competitive nutrition in the uterus has little effect in determining the size of the fœtus, while evidence was given to show that nutrition cannot be the cause of atrophy. It seems possible that the atrophy is due to innate lack of vitality in the fœtus.

No conclusion has yet been arrived at as to the cause of the atrophy, and the various possibilities are still under investigation. —J. Hammond, M.A., *Journ. Agric. Sci.*, vol. vi, Part 3.

Translations.

FRACTURES OF THE EXTREMITIES OF CATTLE.

By G. GIOVANOLI.

Veterinary Surgeon, of Soglio.

New-born animals brought into the world by extreme force frequently suffer from fractures. Later separations in the bony column are chiefly occasioned by sudden immoderate strain or a violent shock to the tissue. Great external force acting on the body will generally cause fracture of bone if the osseous tissue cannot offer sufficient resistance to the onslaught.

Fractures occur in all domestic animals, rather more frequently in animals on the Alps and whilst grazing. A marked influence on the frequency of broken bones is doubtless exercised by management and feeding. Limited movement, such as occurs in long-continued stalling weakens the organs of progression and produces a marked stiffness, especially in young animals. As soon as some of these go out to graze they give vent to their joy at freedom by leaping, jumping, and dashing about, unaware of the danger they run. They are stiff more or less as the result of their long confinement in a stall, and slip and stumble on the least resistance to the earth. In slipping about they can fall over rocks or with a foot between two stones, or be held or jammed by the exposed roots of trees. Powerful efforts to free the foot from restraint easily cause fractures.

The experience of practice shows that the power of resistance of bone to fracture is very different in individual animals. Not all bones break in like circumstances. A slight mishap is frequently sufficient to cause fracture in many animals. Often a powerful force will not cause a broken limb. As a rule short, thick bones surrounded by thick layers of muscular tissue are not so easily broken as long bones covered by no soft structures. In the limbs fractures are easily recognized by abnormal movement and by unnatural movement of parts where there are no joints. With bones covered with much muscle the recognition of breaks is often very difficult, and at times almost impossible. Crepitation, the sure sign of fracture, is made inaudible by the considerable covering.

Before undertaking attempted cure one should determine

XUM

whether treatment will restore to the owner the agricultural use of the animal. Useful treatment and cure does not mean merely that the separated parts shall heal, but that repair will occur in such a way that the injured part will recover its form, mobility, and dexterity.

In cattle, then, treatment is only justified if the lower bony columns of the limbs are broken, and if the fracture has not been produced by great violence with great injury of the soft parts and crushing of the neighbourhood. Fractures in the region of joints are always unfavourable and easily lead to arthritis. If one resolves to undertake the treatment of fractures of thin round bones in animals, one must not forget that first aid has a great bearing on later cure.

Injuries to bones occur as a rule at some distance from the shed or stall where the animal has the opportunity of suffering a mishap. The question then arises: Must we adopt treatment on the spot or not? As a rule treatment is best undertaken in the stall or shed. The getting up and transport of the animal is a matter of the greatest difficulty. It should be done with care, and with the parts fixed as far as possible with a suitable bandage. Without previous immobilization of broken limbs one should never undertake the transport of animals.

Quick repair of a fracture with complete restoration of the form and direction of a limb depends upon replacing the displaced broken ends of the bone and their retention in their normal anatomical position. Disappearance of unevenness signifies restoration to normal position, and thereafter a bandage should be immediately applied. I start bandaging at the claws and carry the bandage well above the fracture. I use white resin boiled with wine to the consistency of broth to smear on the bandage, and put plenty of the mixture on at each turn of the bandage. The stuff when put on warm is easily spread, and fills up all hollows and prevents shifting of the bandage. When the bandage is put on its firmness is increased by a piece of thin soft wood soaked in boiling water and moulded to the part. The splints, of which there may be four or five, are bound fast with string. Thus a light, solid, waterproof and easily constructible bandage is made, which immediately hardens and protects the break sufficiently. The bandage may remain on until it falls away of its own accord.—*Swiss Journal of Veterinary Medicine.*

XUM

SODIUM HYPOSULPHITE IN DISTEMPER.

By Veterinary Surgeon TEPAZZ.

The author calls attention to the fact that in several sporting papers circulating largely in the South of France, the well-known sodium preparation has been used by numerous dog owners in cases of distemper and has been much lauded and credited with producing some wonderful results. Although Tepazz considered the drug as not of much use, since it is well known in veterinary therapy and only a weak anti-pyretic effect is ascribed to it, nevertheless he resolved to give the simple medication a thorough trial, and the opportunity for doing so was in no way wanting. The first experiments being encouraging, he commenced systematic use of the hyposulphite and discarded all other medicine. In this way he treated sixty dogs ill with distemper, and in the great majority of cases quick recovery took place, and therefore he does not want to "hide the light under a bushel."

Treatment has soon shown that sodium hyposulphite is only suitable for distemper cases in the commencing stage, and must then only be given in small doses (3 gr. to 15 gr.). It must be administered daily, and is best dissolved in fluid nourishment, such as milk. Its application is quite simple, and it produces its effect equally well with whatever form of distemper one has to deal. It is valuable because about ten powders generally accomplish the desired end and no other medicine need be considered, and undoubtedly it seems to have a great specific action which requires further investigation. The favourable effect of the drug was always evident even on the second day of its use. The course was generally preceded by giving calomel and scammony, 30 to 50 cg. of each. The first dose of hyposulphite followed one day after the purgative. Where greatly increased respiration was present it was always advisable to supplement internal medication with skin irritants, such as Prieznitz's poultices. The first effect is always abatement of the diarrhœa, the fæces soon exhibit the moulded to the bowel form, and has a pronounced odour of SH_2. This gas also produces a good effect in the nervous form of the disease. Further favourable action is indicated by cessation of the irritable cough, decline of nasal discharge, and return of appetite.—*Revue générale de Méd. vét.*

XUM

Reviews.

A Synopsis of the British Pharmacopœia, 1914, and of the Poison Laws of Great Britain and Ireland. By H. Wippell Gad, F.C.S., of the Middle Temple and Western Circuit, Barrister-at-Law, formerly Lecturer on Pharmacy at the University College, Exeter. Eighth edition. Published by Baillière, Tindall and Cox, 8, Henrietta Street, Covent Garden. 1915.

This is an exceedingly useful little book for those who prescribe and those who dispense. The publication of a new Pharmacopœia is of much importance to the professions of medicine and pharmacy, and the present one is a great advance on its predecessors. The volume under consideration furnishes a handy summary for students, medical men, and pharmacists of the constituents and strength of various drugs. Various tests for chemicals are given, and a section on Poison Laws at the end of the book has been revised by the author in accordance with recent Orders in Council. There is a complete table of all chemicals, drugs, and preparations in the Pharmacopœia, and their characters, metric and imperial doses are given. That the little work has achieved an eighth edition is a credit to the author, and shows that the "Synopsis" is largely used and appreciated. It is serviceably bound, and can easily be carried in the pocket.

G. M.

Journal of the Royal Army Medical Corps. Edited by Colonel W. H. Horrocks, assisted by Major E. T. F. Birrell, both of the R.A.M.C. Issued monthly. Printed and published by John Bale, Sons and Danielsson, Ltd., Oxford House, Oxford Street, W. Price 2s. net.

This is an exceedingly well got-up and printed periodical, full of interesting articles, many of which bear on present-day martial conditions. Lieutenant-Colonel Beveridge, D.S.O., discourses on "Some Essential Factors in the Construction of Field Service and Expeditionary Rations." The selection of articles of diet to meet all needs while campaigning is lucidly dealt with, and the questions of their portability and ease of preparation are well arranged and settled.

The points discussed by Lieutenant-Colonel Beveridge provide for an adequate nourishment for fighting men to last without being replenished for a sufficiently long time, to enable most military operations to be commenced and carried on until further supplies arrive.

The Zululand trypanosome and the susceptibility of animals thereto is written about in an article by Sir David Bruce and several collaborators. Colonel Firth, in "God's Acre in North-west India," records the names of many of the glorious British dead that rest there and gives brief biographies of them.

"The Clinical and Other Notes" are well illustrated and full of interest. One of them records the treatment of Oriental

sores with carbon dioxide snow, a treatment that seems to have been very successful. "The Recollections of General Practice," by Surgeon Major-General Sir A. F. Bradshaw, K.C.B., K.H.P., are very instructive and in many cases rather humorous. The way the surgeon deals with children's ailments and troubles, and the manner in which he allays the maternal quailings, reveal the hand and mind of the master. The doctor who, when called upon to treat a child, replies, "Oh, I know nothing about children!" comes rightfully under the scornful purview of Sir Frederick. His statement that "I think that when a child of very tender age is supposed to be ill, the doctor should insist always upon seeing it quite naked" has a world of wisdom and shrewdness in it.

"Carrying a Wounded Man," "Army Biscuit Recipes," and "The Treatment of Syphilis with Salvarsan," are other interesting articles in the Journal. There is also a commendable notice of a French work on "The Ambulance Dog," the authors of which are Major Bichelonne and Captain Tolet, of the French Army. G. M.

Live Stock Journal. Published by Vinton and Co., Ltd., Chancery Lane, London, E.C. Price 1s.

This journal as usual is rich in records of pedigree stock breeding and exhibiting, and many prominent writers discuss the procedure that should be adopted by breeders to keep pace with the world's call for stock when the war is over. Mr. E. W. Robinson thinks that the funds for horse breeding should come out of the taxation of the realm, and if the thing is to be done properly the guiding finger points in this direction, but that farms for the breeding of horses should be limited only to the Midlands, Ireland, and the South of England is a proposition with which we cannot entirely agree. It leaves out of account many of the eminently suitable regions for rearing in Scotland and the North of England, places which for the production of hardiness, constitution, and stamina can hardly be beaten. Mr. G. Dickinson considers that the best and most economical scheme for the breeding of light horses is that started two years ago by the present Government and worked through the County Committee. Colonel Ricardo writes on the matter from personal experience, and we think that the words of the colonel, as quoted hereafter, go to the root of the matter and form a text which cannot be too often preached from and asserted. He writes: "When the war is over, I am of opinion we should have a strong National Council composed of practical men, not statesmen, but men who have no individual axe to grind, but who would put heart and soul into their work. A clear statement should then be drawn up and published, not sent to any Government department, who would only put it by in some pigeon-hole, but published as a blue-book, or any other colour that may be chosen, get some strong member to run it, and treat it as a National Bill. . . Let us be quite certain that we get what we want; if we are to breed war horses, let us

XUM

do so upon practical lines." Major Nickisson calls attention to the stand-by that hunting has been to the Nation in the matter of horse supply for the present war, and advocates the organization of retired Army officers as Government horse buyers and to classify horses in given districts. Everybody interested in the future horse supply—and what veterinary surgeon is not?—will find from the articles in the journal much food for discussion and thought, and any narrow parochial view of the question will be perhaps remedied and deleted by reading the opinions of several men with diverse minds. The deep-thinking man with a knowledge of organization and administration will probably say that for real betterment in the production of a good supply of first-class Army horses there must be more cohesion and understanding between the Board of Agriculture and the War Office.

"The Cattle Outlook after the War" is discussed by Messrs. Stratton and Thomas. Mr. Matthews refers to the success following the Government's scheme for assisting the keeping of pedigree bulls of the Shorthorn class. Sheep and pigs have adequate space devoted to their interests, and the French basset hound has an article to himself. It is very interesting and instructive. The future of poultry keeping in days like the present, when production ought to be doubled or trebled, receives due and apt consideration. The journal is well illustrated, and ought to be in the hands of all agriculturists concerned in their country's welfare. We know of no investment that will return more profit at the present time for the sum of one shilling than the *Live Stock Journal* for 1915. G. M.

NOTE.—All communications should be addressed to 8, Henrietta Street, Covent Garden, London, W.C. Telephone, 4646 Gerrard. Telegrams, "Baillière, London."

Letters for the JOURNAL, literary contributions, reports, notices, books for review, exchanges, new instruments or materials, and all matter for publication (except advertisements) should be addressed to the Editors.

Manuscript—preferably typewritten—should be on one side only of paper, marked with full name of author.

Illustrations for reproduction should be in good black or dark brown on white paper or card.

Advertisements and all business matters relating to the JOURNAL should be addressed to the publishers, Messrs. Baillière, Tindall and Cox.

XUM